

Drinking Water Perspective

- Regulatory Framework
- CALFED Urban Parameters of Concern
- Recommended Target Levels
- CALFED Drinking Water Actions
- Other Concerns of Drinking Water Agencies

Regulatory Framework

- Enhanced Surface Water Treatment Rule

Cryptosporidium

- Disinfectants/Disinfection By-Products Rule

Total Organic Carbon (precursors)

Bromate (bromide)

CALFED Urban Parameters of Concern

- Bromide
- Nutrients (nitrate) - not of concern to CUWA
- Pathogens
- Salinity (TDS) - and chloride
- TOC
- Turbidity
- Viruses - included with pathogens

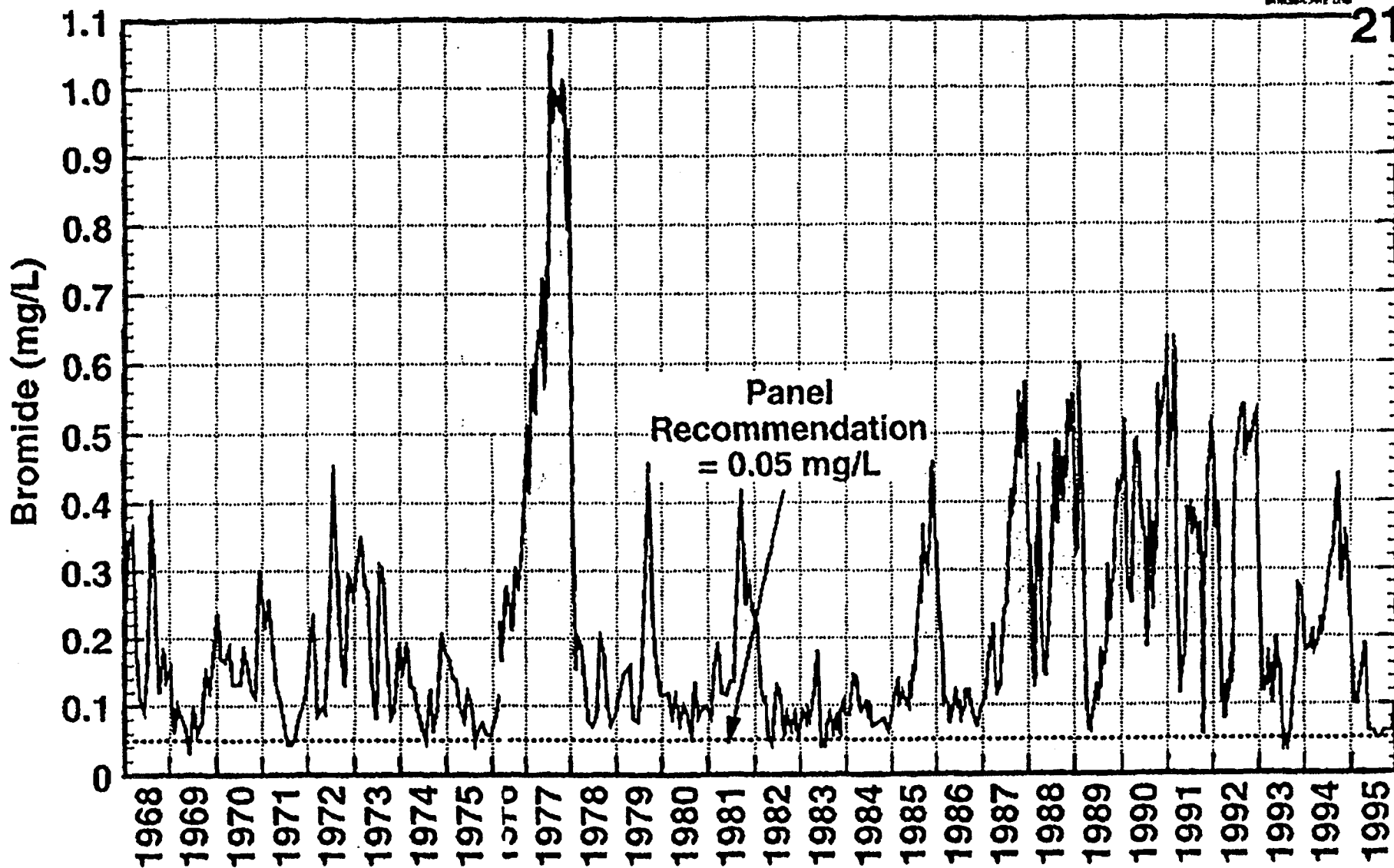
Bay Delta Water Quality Evaluation

Treatment Scenario	Regulatory Scenario	Delta Export Water Quality		Comments
		TOC (mg/L)	Bromide (mg/L)	
Enhanced coagulation, free chlorine/ chloramines	Stage 2 DBP MCLs, 1 log <i>Giardia</i> inactivation	<3.0	<0.2	Enhanced coagulation with chlorine/chloramines will not achieve 1 log <i>Cryptosporidium</i> inactivation
		<4.0	<0.05	
Enhanced coagulation, free chlorine/ chloramines	Stage 2 DBP MCLs, 2 log <i>Giardia</i> inactivation	<3.0	<0.10	
Preozonation at ambient pH/ chloramines	Stage 2 DBP MCLs, 2 log <i>Giardia</i> inactivation	<4.0	<0.05	Could possibly meet Bromate MCL of 10 µg/L but not 5 µg/L
Preozonation at ambient pH/ chloramines	Stage 2 DBP MCLs 1 log <i>Cryptosporidium</i> inactivation	<4.0	<0.05	Could not meet Bromate MCL of 10 µg/L
Preozonation at pH 6.5/ chloramines	Stage 2 DBP MCLs 2 log <i>Giardia</i> inactivation	<3.0	≤0.10	Could meet Bromate MCL of 5 µg/L
Preozonation at pH 6.5/ chloramines	Stage 2 DBP MCLs 1 log <i>Cryptosporidium</i> inactivation	<3.0	≤0.05	Could possibly meet Bromate MCL of 5 µg/L

Recommended Target Levels

- Total Organic Carbon - 3 mg/L
- Bromide - 0.05 mg/L
- Current Conditions

Location	TOC median, mg/L	TOC max, mg/L
Banks P.P.	4	9.6
NBA Intake	5.2	21.3
Sac. R. @ Greenes Landing	2.1	7.7



Historical Bromide at H.O. Banks Pumping Plant

Recommended Target Levels

- Pathogens - 1 oocyst/100L
 - Selection of an alternative should not result in degraded water quality necessitating increased removal requirements.
- Turbidity - 50 NTU
 - Reduced variability in turbidity is needed to improve treatment plant performance.

Recommended Target Levels

- Salinity (TDS)
 - Increased water to meet Delta objectives
 - Adverse effects on groundwater recharge, recycling, and blending
 - Taste
 - Corrosion of appliances and infrastructure
- The selected alternative should, at a minimum, meet SWP contract objectives:

10 year average - 220 mg/L
monthly average - 440 mg/L

CALFED Drinking Water Actions

1. Improve treated drinking water by providing incentives for addition of enhanced coagulation, ozone, granular activated carbon filtration, and/or membrane filtration.

- Reliance on treatment alone to solve public health water quality needs will not be durable, one of CALFED's solution principles.
- Drinking water agencies are going to enhanced coagulation and ozone. Not feasible to go to GAC and membranes.
- The Bay-Delta solution must provide the highest source water quality reasonably available. Existing high quality sources must be protected.

CALFED Drinking Water Actions

2. Improve source water quality parameters of concern at domestic water supply intakes by relocating water supply intakes to areas that are not influenced by those discharges.

- Previously this action included reducing Delta island discharges high in TOC. This should be added back into the action by CALFED staff.
- Other measures to improve source water quality in the Delta need to be incorporated into the CALFED program.
- Addition of an alternative intake for the NBA may be warranted based on MWQI study.

Other Concerns of Drinking Water Agencies

- CALFED should develop a Salinity Control Policy to provide reliable low salinity water.
- CALFED must evaluate impacts on drinking water supplies of other CALFED actions:
 - Wetlands treatment for pollutant removal
 - Shallow water habitat
 - Flooded Delta islands
- Ecosystem water quality must be improved:
 - Toxicity must be assessed and understood
 - Measures to control toxicity must be evaluated and implemented